

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re patent)	Before the Examiner
application of:)	
)	
Vitale Bruzzo)	Group Art Unit
)	
Serial No. 10/070,300)	
)	
Filed March 5, 2002)	
)	
PROCEDURE AND DEVICE OF)	
COOLING BY ABSORPTION)	June 7, 2002

TRANSMITTAL OF ENGLISH TRANSLATION

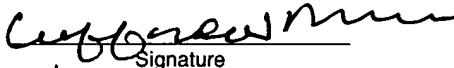
Assistant Commissioner for Patents
Washington, DC 20231

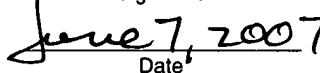
Sir:

On March 5, 2002, the above-identified patent application was filed by Express Mail (Receipt No. EL916999709US) with an English translation of the application which was found to be defective . Applicant transmits herewith a new English translation of the application with the large entity surcharge therefore of \$130.00 (37 CFR 1.492(f)).

I hereby certify this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to BOX PCT, Commissioner for Patents, Washington, D.C., 20231 on June 7, 2002.

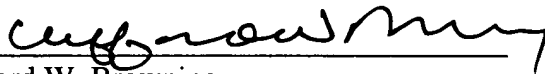
Clifford W. Browning
Name of Registered Representative


Signature


Date

No additional fees are believed to be due, but if any additional fees are deemed required, please charge such fees to Deposit Account No. 23-3030.

Respectfully submitted

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PROCESS AND DEVICE FOR COOLING BY ABSORPTION

The present invention concerns a process and a device for the generation of cold by absorption, and in particular a process and a device for accelerating the start-up of the cooling process.

A system for cooling by absorption consists schematically of a generator, an evaporator and a condenser. To function, the generator is filled with a mixture of at least two miscible substances, hereinafter referred to as a binary mixture (a refrigerant and an absorbent). This mixture is combined in an absorber, in which absorption of the refrigerant by the absorbent takes place. The refrigerant and the absorbent must have evaporating pressures sufficiently different so that, when the generator is heated, the more volatile of the two, namely the refrigerant, evaporates and transforms into a liquid in the condenser.

The absorption system usually includes a pump for returning the binary mixture from the absorber to the generator. The vapours pass through the condenser, which condenses them into a liquid, which is led to the evaporator's expansion valve, in order to effect the desired cooling.

This principle being based on heating the binary mixture, the start-up process is relatively slow. Indeed, the temperature of the binary mixture must be raised by several tens of degrees before it is transformed into vapour. As long as no vapour is produced, the cooling function has no effect.

Such a device according to the introduction of claim 1, is described in document DE 28 56 767 A.

The objective of the present invention is to permit the generation of cold by such a system as soon as the cooling system is switched on.

This objective is attained by a refrigerant stocking device under pressure in an appropriate reservoir, and by an access control to the said reservoir by means of two valves.

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CLAIMS

1. A system for producing cold by absorption consisting of a generator (1), a condenser (2), an evaporator (7), an expansion valve (6) and an absorber (8) and a storage group for liquid refrigerant under pressure, consisting of at least a reservoir (4), a valve (3) upstream of the said reservoir (4) and a valve (5) downstream of the said reservoir (4), where the upstream valve (3) is open from the moment that the upstream pressure is greater than or equal to the downstream pressure and the downstream valve (5) is closed from the moment that the generator ceases to produce vapour.
2. A system according to claim 1, where the reservoir (4) includes a safety valve (9).
3. A system according to claim 1, where the reservoir assembly (4), upstream valve (3) and downstream valve (5) are mounted in such a way that these three elements cannot be dismantled.
4. A system according to claim 1, where the upstream valve (3) is a solenoid valve.
5. A method for producing cold by absorption consisting of the following steps:
 - heating a refrigerant-absorbent mixture in a boiler (1) until the refrigerant evaporates,
 - condensation of the refrigerant vapours in liquid form in a condenser (2),
 - expanding the refrigerant under pressure in an evaporator (7),
 - absorption of the expanded refrigerant with the absorbent in the absorber (8),
 - storage of the refrigerant in liquid form in a reservoir (4), placed between the condenser (2) and the evaporator (7), where it additionally includes the following stages:

- opening of a downstream valve (5) once the production of cold is desired, the reservoir discharging the liquid under pressure into the evaporator (7) in order to produce cold,
- opening of an upstream valve (3) uniquely when the pressure at the outlet of condenser (2) is greater than the pressure in the reservoir (4),
- closing of the downstream valve (5) as soon as the boiler no longer produces vapour.

6 A method according to claim 5 where the downstream valve (5) is closed just before stopping the production of vapour, the overpressure of the liquid refrigerant thus generated being accumulated in the reservoir (4).